

## **Major Sponsors:**

**California Bay-Delta Authority**  
**California Department of Fish & Game**  
**California Department of Water Resources**  
**US Bureau of Reclamation**

## **Sponsors:**

**CH2M Hill**  
**Montgomery Watson Harza**  
**National Oceanic and Atmospheric Administration Fisheries**  
**Sacramento Area Flood Control Agency**  
**Sacramento Groundwater Authority**  
**Sacramento Region Water Forum**  
**Surface Water Resources Inc.**  
**US Bureau of Reclamation**  
**US Fish and Wildlife Service**

## **Collaborators:**

**American River Parkway Foundation**  
**American River Natural History Association**  
**EDAW**  
**EIS, Inc.**  
**Flood Plain Management Association**  
**Groundwater Resources Association of California**  
**Jones and Stokes**  
**MBK Engineers**  
**Sacramento County**  
**Save the American River Association**  
**Sierra College Natural History Museum**



**Thursday, June 5, 2003**

**Lower American River Science Conference**

8:00	–	9:00 am	Registration . . . . .	University Ballroom Foyer
			Continental Breakfast . . . . .	University Ballroom II
9:00	–	10:15 am	Welcome and Opening Remarks . . . . .	University Ballroom I
			Plenary Session	
10:15	–	10:30 am	Break . . . . .	University Ballroom II
10:30	–	12:00 pm	Plenary Session . . . . .	University Ballroom I
12:00	–	1:00 pm	Luncheon . . . . .	University Ballroom II
1:00	–	2:30 pm	Concurrent Theme Sessions	
			Groundwater Session . . . . .	University Ballroom III
			Fish Session . . . . .	Hinde Auditorium
2:30	–	3:00 pm	Refreshment Break . . . . .	University Ballroom II
3:00	–	4:30 pm	Concurrent Theme Session	
			Groundwater Session . . . . .	University Ballroom III
			Fish Session . . . . .	Hinde Auditorium
4:30	–	6:30 pm	Exhibit Viewing and Reception . . . . .	University Ballroom II
		6:30 pm	Adjourn	

**Friday, June 6, 2003**

**Lower American River Science Conference**

7:30	–	8:30 am	Registration . . . . .	University Ballroom Foyer
			Continental Breakfast/Exhibit Viewing . . . . .	University Ballroom II
8:30	–	10:00 am	Concurrent Theme Sessions	
			Groundwater Session . . . . .	University Ballroom III
			Fish Session . . . . .	Hinde Auditorium
10:00	–	10:20 am	Break/Exhibit Viewing . . . . .	University Ballroom II
10:20	–	11:50 am	Concurrent Theme Sessions	
			Groundwater Session . . . . .	University Ballroom III
			Fish Session . . . . .	Hinde Auditorium
11:50	–	1:00 pm	Luncheon . . . . .	University Ballroom II
1:00	–	2:00 pm	Concurrent Theme Sessions	
			Groundwater Session . . . . .	University Ballroom III
			Fish Session . . . . .	Hinde Auditorium
2:00	–	2:30 pm	Refreshment Break/Exhibit Viewing . . . . .	University Ballroom II
2:30	–	3:30 pm	Plenary Session . . . . .	University Ballroom I
3:30	–	3:45 pm	Conference Feedback . . . . .	University Ballroom I
		3:45 pm	Conference Adjourn	

**2003 California Weather Symposium:**

**Forecasting Extreme Precipitation in the Sierra Nevada and Implications for the American River Watershed**

7:30	–	8:30 am	Registration . . . . .	University Ballroom Foyer
			Continental Breakfast/Exhibit Viewing . . . . .	University Ballroom II
8:30	–	10:00 am	General Session . . . . .	Redwood Room
10:00	–	10:20 am	Break/Exhibit Viewing . . . . .	University Ballroom II
10:20	–	11:50 am	General Session . . . . .	Redwood Room
11:50	–	1:00 pm	Luncheon . . . . .	University Ballroom II
1:00	–	2:00 pm	General Session . . . . .	Redwood Room
2:00	–	2:30 pm	Refreshment Break/Exhibit Viewing . . . . .	University Ballroom II
2:30	–	3:30 pm	General Session . . . . .	Redwood Room
3:30	–	3:45 pm	Symposium Feedback . . . . .	Redwood Room
		3:45 pm	Symposium Adjourn	

# Thursday, June 5, 2003

## CONFERENCE AGENDA

<b>8:00 – 9:00 am</b>	<b>Registration .....</b>	<b>University Ballroom Foyer</b>
	<b>Continental Breakfast .....</b>	<b>University Ballroom II</b>
<b>9:00 – 9:10 am</b>	<b>Welcome and Opening Remarks .....</b>	<b>University Ballroom I</b>
	<i>Marion O'Leary, Dean, California State University, Sacramento, College of Natural Sciences and Mathematics</i>	
<b>9:10 – 9:30 am</b>	<b>Connecting the Dots: Fish, Groundwater and Weather .....</b>	<b>University Ballroom I</b>
	<i>Tim Washburn, General Counsel, Sacramento Area Flood Control Agency</i>	
<b>9:30 – 10:15 am</b>	<b>Hydrostratigraphy and Contaminant Transport Phenomena Beneath Rancho Cordova and Vicinity .....</b>	<b>University Ballroom I</b>
	<i>Graham Fogg, Professor, University of California, Davis, Department of Land Air Water Resources</i>	
<b>10:15 – 10:30 am</b>	<b>Break .....</b>	<b>University Ballroom II</b>
<b>10:30 – 11:15 am</b>	<b>Fish of the American River: An Overview .....</b>	<b>University Ballroom I</b>
	<i>Peter Moyle, Professor, University of California, Davis, Department of Wildlife, Fish and Conservation Biology</i>	
<b>11:15 – 12:00 pm</b>	<b>Lower American River in the Context of the American River Watershed. ....</b>	<b>University Ballroom I</b>
	<i>Rich Gresham, Trustee, Sacramento River Watershed Program</i>	
<b>12:00 – 1:00 pm</b>	<b>Luncheon. ....</b>	<b>University Ballroom II</b>
<b>1:00 – 2:30 pm</b>	<b>Concurrent Theme Sessions (See Below)</b>	

### Groundwater Session Groundwater Characterization (University Ballroom III)

#### 1:00 – 1:30 pm

Overview of Northern and Southern Sacramento  
Basin Hydrogeology  
*Chris Petersen, Supervising Hydrogeologist,  
Montgomery Watson Harza*

#### 1:30 – 2:00 pm

Aquifer Response to Changes in Stage of the  
American River  
*Dave Evans, Associate Professor of Hydrogeology,  
California State University, Sacramento,  
Department of Geology*

#### 2:00 – 2:30 pm

Groundwater Modeling of Sacramento County  
*Ali Taghavi, Principal Hydrologist, Water Resources and  
Information Management Engineering*

### Fish Session (Hinde Auditorium)

#### 1:00 – 1:30 pm

Evaluation of Salmonid Spawning Habitat and  
Implementation of a Habitat Improvement  
Project on the Lower American River  
*Kris Vyverberg, Associate Engineering Geologist,  
California Department of Fish and Game*

#### 1:30 – 2:00 pm

Phase Three Assessment of Lower American River  
Salmonid Spawning Gravels  
*Tim Horner, Associate Professor,  
California State University, Sacramento,  
Department of Geology*

#### 2:00 – 2:30 pm

Past, Present, and Future Role of Nimbus Salmon  
and Steelhead Hatchery in Anadromous Fisheries  
Management of the American River  
*Armando Quiñones, Senior Hatchery Supervisor;  
Terry West, Fish Hatchery Manager;  
Chuck Knutson, State Fish Hatchery Coordinator,  
California Department of Fish and Game*

<b>2:30 – 3:00 pm</b>	<b>Refreshment Break .....</b>	<b>University Ballroom II</b>
-----------------------	--------------------------------	-------------------------------

## Concurrent Theme Sessions (Continued)

Groundwater Session Groundwater Quality (University Ballroom III)		Fish Session (Hinde Auditorium)	
<b>3:00 – 3:30 pm</b>	Contaminated Sites in the NA and SA Basins <i>Ned Clayton, SKS</i>	<b>3:00 – 3:30 pm</b>	Distribution and Relative Importance of Hatchery and Wild Salmon: Lessons from Intensive Studies on the Feather River <i>Brad Cavallo, Environmental Scientist, California Department of Water Resources</i>
<b>3:30 – 4:00 pm</b>	Aerojet Groundwater Remediation <i>Rodney Fricke, Environmental Manager, Aerojet</i>	<b>3:30 – 4:00 pm</b>	Lower American River Snorkel Survey (Winter – Spring 2003) <i>Tom Cannon, Executive Director, Fishery Foundation</i>
<b>4:00 – 4:30 pm</b>	Groundwater Quality Issues in the Middle Lower American River Area <i>Richard Shatz, Principal Hydrogeologist, Bookman Edmonston</i>	<b>4:00 – 4:30 pm</b>	Growth and Survival of Juvenile Steelhead Relative to Flow and Temperature Conditions on the Lower American River <i>Rob Titus, Staff Environmental Scientist, California Department of Fish and Game</i>
<b>4:30 – 6:30 pm</b>	<b>Exhibit Viewing and Reception . . . . . University Ballroom II</b>		
<b>6:30 pm</b>	<b>Adjourn</b>		

# Friday, June 6, 2003

- 7:30 – 8:30 am**    **Registration .....** **University Ballroom Foyer**  
**Continental Breakfast/Exhibit Viewing.....** **University Ballroom II**
- 8:30 –10:00 am**    **Concurrent Theme Sessions (See Below)**

## Groundwater Session Groundwater Supply, Management, and Policy (University Ballroom III)

**8:30 – 9:00 am**

Sacramento Groundwater Authority Basin  
Management Tools  
*Jon Goetz, Supervising Engineer,  
Montgomery Watson Harza*

**9:00 – 9:30 am**

Water Forum Overview and Sustainable Yield  
*Jim McCormack, Consultant,  
Water Forum Successor Effort*

**9:30 –10:00 am**

Central County Groundwater Forum  
*Larry Norton, Senior Mediator,  
Center for Collaborative Policy*

## Fish Session (Hinde Auditorium)

**8:30 – 9:00 am**

Homogenization of Fall-Run Chinook Salmon Gene  
Pools in the Central Valley  
*Kevin Williamson, Research Assistant,  
University of California, Davis,  
Genomic Variation Lab*

**9:00 – 9:30 am**

Does Stranding Matter? Juvenile Salmon Rearing and  
Emigration from the Yolo Bypass Floodplain  
*Ted Sommer, Senior Environmental Specialist,  
California Department of Water Resources*

**9:30 –10:00 am**

Overview of Chinook Salmon Ecology in the  
Lower American River  
*Rob Titus, Staff Environmental Scientist,  
California Department of Fish and Game*

**10:00 –10:20 am**    **Break/Exhibit Viewing .....** **University Ballroom II**

## Groundwater Session Groundwater Supply, Management, and Policy (University Ballroom III)

**10:20 –10:50 am**

Sacramento County Water Agency and Zone 40  
*Darrell Eck, Senior Civil Engineer,  
Sacramento County Water Agency*

**10:50 –11:20 am**

Update on the SWRCB Hearing on the Lower American  
River Fully Allocated Stream Filing for Reopening  
*Michael Fife, Attorney, Hatch & Parent*

## Groundwater Session Conjunctive Use of Surface Water and Groundwater (University Ballroom III)

**11:20 –11:50 am**

Overview of Basin Conjunctive Use Opportunities  
*Carl Hauge, Chief Hydrologist,  
Department of Water Resources*

## Fish Session (Hinde Auditorium)

**10:20 –10:50 am**

Otolith Based Studies on the Life History of Chinook  
Salmon from the Central Valley  
*Chris Donohoe, Research Associate,  
National Oceanic and Atmospheric Administration*

**10:50 –11:20 am**

Integrating Ecological Concerns into Operation of the  
Lower American River  
*Dave Robinson, Environmental Specialist,  
US Bureau of Reclamation*

**11:20 –11:50 am**

American River Steelhead Spawning  
*John Hannon, Fisheries Biologist,  
US Bureau of Reclamation*

**11:50 – 1:00 pm**    **Luncheon.....** **University Ballroom II**

## Concurrent Theme Sessions (Continued)

Groundwater Session Conjunctive Use of Surface Water and Groundwater (University Ballroom III)		Fish Session (Hinde Auditorium)	
<b>1:00 – 1:30 pm</b> North Area Groundwater Basin Management: Challenges and Opportunities <i>Ed Winkler, General Manager, Regional Water Authority</i>		<b>1:00 – 1:30 pm</b> Integration of Delta and American River Operations: Are We Burning the Candle at Both Ends? <i>Jim White, Staff Environment Specialist, California Department of Fish and Game</i>	
<b>1:30 – 2:00 pm</b> Sacramento County Recycling Program <i>Ruben Robles, Senior Civil Engineer, Sacramento Regional County Sanitation District</i>		<b>1:30 – 2:00 pm</b> Ocean CWT Recovery Program, How It Works and Recent American River CWT Harvest in Ocean Fisheries: <ul style="list-style-type: none"><li>• What data are required to estimate ocean harvest rates on American River stocks?</li><li>• How low mark rates coupled with low sample rates can have a large influence on ocean fishery management.</li></ul> <i>Allen Grover, Senior Scientist, California Department of Fish and Game</i>	
<b>2:00 – 2:30 pm</b>	<b>Refreshment Break/Exhibit Viewing ..... University Ballroom II</b>		
<b>2:30 – 3:30 pm</b>	<b>Future Work: How Do We Balance Competing Needs on the Lower American River? ..... University Ballroom I</b> <i>Moderator: Carl Hauge, Chief Hydrologist, Department of Water Resources</i> <i>Panel:</i> <i>Groundwater and Conjunctive Use Proponent:</i> <i>Tim Parker, Senior Engineering Geologist, Department of Water Resources</i> <i>Flood Control Proponent:</i> <i>Tim Washburn, Agency Counsel, Sacramento Area Flood Control Agency</i> <i>Aquatic Habitat Proponent:</i> <i>Felix Smith, Director, Save the American River Association, Inc.</i> <i>Fish Proponent:</i> <i>Leo Winternitz, Executive Director, Sacramento Region Water Forum</i> <i>Water Purveyor Proponent:</i> <i>Ed Winkler, General Manager, Regional Water Authority</i>		
<b>3:30 – 3:45 pm</b>	<b>Conference Feedback ..... University Ballroom I</b>		
<b>3:45 pm</b>	<b>Conference Adjourn</b>		



# Friday, June 6, 2003

## 2003 California Weather Symposium: Forecasting Extreme Precipitation in the Sierra Nevada and Implications for the American River Watershed

<b>7:30 – 8:30 am</b>	<b>Registration . . . . .</b>	<b>University Ballroom Foyer</b>
	<b>Continental Breakfast/Exhibit Viewing . . . . .</b>	<b>University Ballroom II</b>
<b>8:30 – 8:35 am</b>	<b>Welcome. . . . .</b>	<b>Redwood Room</b>
	<i>Gary Estes, Floodplain Management Association</i>	
<b>8:35 – 9:00 am</b>	<b>Connecting the Dots: Fish, Groundwater, and Weather . . . . .</b>	<b>Redwood Room</b>
	<i>Tim Washburn, General Counsel, Sacramento Area Flood Control Agency, Sacramento, CA</i>	
<b>9:00 – 9:30 am</b>	<b>Extreme Precipitation . . . . .</b>	<b>Redwood Room</b>
	<i>Maurice Roos, P.E., Chief Hydrologist, Division of Flood Management, California Department of Water Resources, Sacramento, CA</i>	
<b>9:30 – 10:00 am</b>	<b>The Potential for Adaptive Reservoir Operations Provided by Forecast Information. . . . .</b>	<b>Redwood Room</b>
	<i>Beth Faber, PhD, Research Hydrologic Engineer, Hydrologic Engineering Center, US Army Corps of Engineers, Davis, CA</i>	
<b>10:00 – 10:20 am</b>	<b>Break/Exhibit Viewing . . . . .</b>	<b>University Ballroom II</b>
<b>10:20 – 10:50 am</b>	<b>Operating Folsom Dam Using Weather Forecasts . . . . .</b>	<b>Redwood Room</b>
	<i>Paul Pagner, P.E., Chief, Water Management Section, US Army Corps of Engineers, Sacramento, CA</i>	
<b>10:50 – 11:20 am</b>	<b>Precipitation Structure in the Sierra Nevada During Winter . . . . .</b>	<b>Redwood Room</b>
	<i>Dan Cayan, PhD, Climate Research Division, Scripps Institute of Oceanography, University of California, San Diego, San Diego, CA</i>	
<b>11:20 – 11:50 am</b>	<b>What is our Current Understanding of the Factors Governing Extreme Precipitation in the Sierra Nevada and How Predictable are Such Events? . . . . .</b>	<b>Redwood Room</b>
	<i>Norman "Wes" Junker, Senior Forecaster, Forecast Operation Branch, Hydrometeorological Prediction Center, National Weather Service, Camp Springs, MD</i>	
<b>11:50 – 1:00 pm</b>	<b>Luncheon. . . . .</b>	<b>University Ballroom II</b>
<b>1:00 – 1:30 pm</b>	<b>Characterizing Precipitation Forecast Errors for the Folsom Lake Watershed. . . . .</b>	<b>Redwood Room</b>
	<i>Theresa Carpenter, P.E., Hydrologic Engineer, Hydrologic Research Center, San Diego, CA</i>	
<b>1:30 – 2:00 pm</b>	<b>Extreme Precipitation on the American River Watershed: Strategies for Improving . . . . .</b>	<b>Redwood Room</b>
	<i>F. Martin "Marty" Ralph, PhD, Chief, Regional Water and Climate Application Division Environmental Technology Laboratory, National Oceanography and Atmospheric Administration, Boulder, CO</i>	
<b>2:00 – 2:30 pm</b>	<b>Refreshment Break/Exhibit Viewing . . . . .</b>	<b>University Ballroom II</b>

**Friday, June 6, 2003**

---

**2003 California Weather Symposium:  
Forecasting Extreme Precipitation in the Sierra Nevada and Implications for the American River Watershed**

**2:30 – 3:30 pm    What Additional Knowledge/Data/Science is Needed to Improve the  
Forecasting of Extreme Precipitation in the Sierra Nevada? ..... Redwood Room**

*Moderator: Elissa Lynn, Meteorologist, News 10 KXTV, Sacramento, CA*

*Panel:*

*Norman "Wes" Junker, Senior Forecaster, Forecast Operation Branch, Hydrometeorological  
Prediction Center, National Weather Service, Camp Springs, MD*

*F. Martin "Marty" Ralph, PhD, Chief, Regional Water and Climate Application Division  
Environmental Technology Laboratory, National Oceanography and Atmospheric  
Administration, Boulder, CO*

*J. Owen Rhea, PhD, Senior Hydrometeorological Analysis and Support Forecaster (Retired),  
California-Nevada River Forecast Center, National Weather Service, Sacramento, CA*

**3:30 – 3:45 pm    Symposium Feedback. .... Redwood Room**

**3:45 pm    Symposium Adjourn**

**SYMPOSIUM AGENDA**